LISTING OF THE CLAIMS

1. (Currently amended) A method for inducing a biological response in a biological system comprising one or more receptors which comprises the step of introducing into the biological system a multivalent ligand which comprises a plurality of signal recognition elements ~~recognized by at least one of the receptors and~~ bonded to a molecular scaffold wherein the plurality of signal recognition elements are recognized by at least one of the receptors.

2. (Original)The method of claim 1 wherein the biological system comprises a cell having one or more cell receptors to which at least one of the signal recognition elements bind.

3. (Original)The method of claim 2 wherein binding of the signal recognition element to the receptor induces an intracellular response and/or an intercellular response.

4 - 16. (Withdrawn)

17. (Previously presented)The method of claim 2 wherein the cell is a eukaryotic cell.

18. (Original) The method of claim 17 wherein the multivalent ligand modulates signal transduction mediated by G-protein coupled receptors.

19. (Currently amended) The method of claim ~~18~~ 17 wherein signal transduction is mediated by receptors.

20. (Original) The method of claim 17 wherein the eukaryotic cell is an epithelial cell or an endothelial cell.

21. (Previously presented)The method of claim 17 wherein the eukaryotic cell is a cell of the immune system.

22. (Previously presented)The method of claim 21 wherein the eukaryotic cell is a lymphocyte or a leukocyte.

23. (Original)The method of claim 21 wherein the eukaryotic cell is a neutrophil.

24 - 27. (Withdrawn)

28. (Original)The method of claim 17 wherein the biological response is the release of an intracellular signal by the cell.

29. (Original)The method of claim 28 wherein the multivalent ligand initiates or enhances the release of the intracellular signal.

30. (Original)The method of claim 21 wherein the cell is a B-cell or a T-cell.

31 - 40. (Withdrawn)

41. (Original)The method of claim 1 wherein the multivalent ligand reorganizes receptors on the surface of a cell to modulate the biological response.

42. (Original)The method of claim 41 wherein the relative positions of different receptors on the cell surface is changed to modulate the response.

43 - 58. (Withdrawn)

59. (Original) The method of claim 1 wherein the multivalent ligand further comprises one or more recognition elements, one or more functional elements or both.

60. (Previously presented) The method of claim 59 wherein one or more of the recognition elements binds to a protein.

61. (Withdrawn)

62. (Previously presented)The method of claim 1 wherein one or more of the signal recognition elements is selected from the group consisting of an amino acid, a peptide, a protein, a derivatized peptide, a monosaccharide, a disaccharide, a polysaccharide, a nucleic acid, a cell nutrient, an epitope, an antigenic determinant, a hapten, or a cell surface receptor.

63. (Withdrawn)

64. (Previously presented The method of claim 1 wherein one or more of the signal recognition elements is a peptide or a derivatized peptide.

65. (Withdrawn)

66. (Previously presented) The method of claim 1 wherein one or more of the signal recognition elements is an N-formyl peptide.

67. (Withdrawn)

68. (Previously presented) The method of claim 1 wherein the multivalent ligand comprises a defined number of signal recognition elements.

69 - 70. (Withdrawn)

71. (Original) The method of claim 1 wherein the multivalent ligand comprises about 25 or more signal recognition elements .

72. (Original) The method of claim 1 wherein the multivalent ligand comprises about 50 or more signal recognition elements.

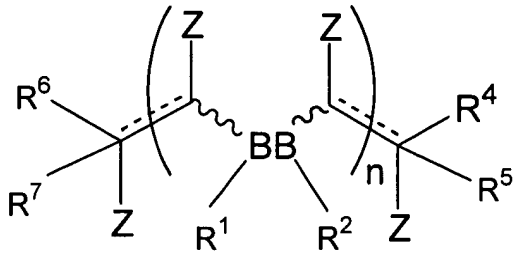
73. (Original) The method of claim 1 wherein the multivalent ligand comprises about 100 or more signal recognition elements.

74. (Original) The method of claim 1 wherein the signal recognition elements are covalently bonded to the molecular scaffold.

75 - 80. (Withdrawn)

81. (Currently amended) The method of claim 1 wherein the molecular scaffold is a ~~ROMP~~ ring-opening metathesis polymerization scaffold.

82. (Currently amended) The method of claim 1 wherein the multivalent ligand has the structure:



wherein:

n is an integer that is 2 or more which represents the number of repeating units within the parentheses in the ligand;

the dashed lines indicate optional double bonds;

~~"BB"~~ BB represents the backbone repeating unit, which may be cyclic or acyclic, and may be the same or different in a random or block arrangement, the wavy lines indicating that a BB unit may be in either a cis or trans configuration in the ligand backbone;
each R^1 and R^2, independently of other R^1 and R^2 in the ligand, can be H or an organic group, ~~a recognition element~~ $-L^2$-RE, ~~a functional element~~ $-L^3$-FE or ~~a signal recognition element~~ $-L^1$-SRE or both of R^1 and R^2 can be the $-L^1$-SRE group where RE is a recognition element, SRE is a signal recognition element and FE is a functional element;
wherein L^{1-3}, independently, represent optional linker groups which may be the same or different in different repeating units;
R^4 and R^5 are H, or an organic group;
R^6 and R^7 are H, an organic group or an end-group; and
Z , independently of other Z in the ligand, is H, OH, OR^8, SH, a halide ~~(F, Br, Cl, I),~~ NH_2 or $N(R^8)_2$, where R^8 is H or an organic group or Z is absent when the optional double bond is present.

83. (Previously presented)The method of claim 82 wherein SRE is a peptide or a derivatized peptide.

84. (Original) The method of claim 83 wherein SRE is an N-formyl peptide.

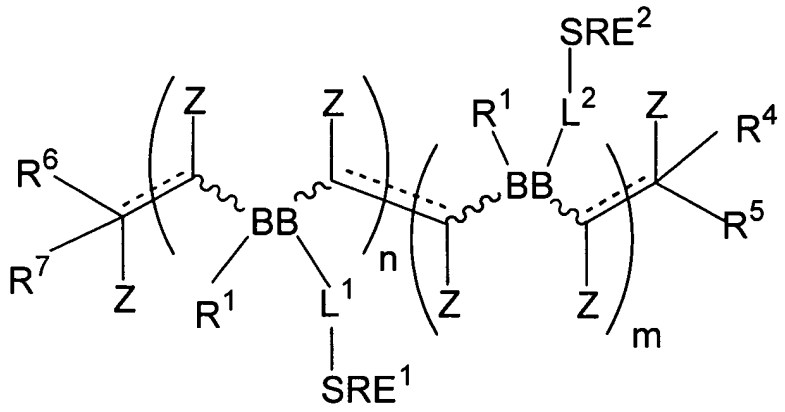
85. (Original) The method of claim 82 wherein SRE is a chemoattractant.

86. (Original) The method of claim 82 wherein SRE is an epitope.

87 - 89. (Withdrawn)

90. (Original) The method of claim 82 wherein at least one R^1 or R^2 is an $-L^2$-RE group.

91. (Currently amended) The method of claim 82 wherein the multivalent ligand has the structure:



wherein:

m + n is 2 or more;

dashed lines indicate the presence of optional double bonds;

~~"BB"~~ BB represents the backbone repeating unit, which may be cyclic or acyclic, ~~and~~ where each BB may be the same or different ~~in a random or block arrangement~~ and wavy lines indicate that the BB unit may be in a cis or trans configuration in the backbone of the repeating unit;

each R^1 , independent of other R^1 in the ligand, can be H or an organic group;

L^1 and L^2, which may be the same or different, represent optional linker groups;

SRE^1 and SRE^2 represent two different signal ~~groups~~ recognition elements;

R^4 and R^5 are H, an organic group or an end-group;

R^6 and R^7 are H, an organic group or an end-group; and

Z , independently of other Z in the polymer, is H, OH, OR^8, SH, a halide (F, Br, Cl, I), NH_2 or $N(R^8)_2$ where R^8 is H or an organic group or Z is absent when a double bond is present.

92. (Original) The method of claim 91 wherein one or both of SRE^1 and SRE^2 are peptides or derivatized peptides.

93. (Withdrawn)

94. (Original) The method of claim 91 wherein one or both of SRE^1 or SRE^2 are epitopes.

95. (Previously presented) The method of claim 91 wherein one of SRE^1 or SRE^2 is an epitope and the other of SRE^1 or SRE^2 binds to a cell surface receptor of an immune cell.

96 - 139. (Withdrawn)

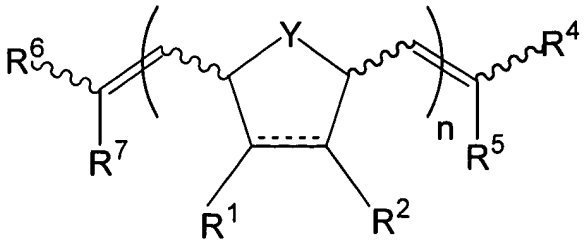
140. (Previously presented) The method of claim 1 wherein the multivalent ligand is bonded to a solid support.

141. (Previously presented) The method of claim 82 wherein the multivalent ligand is bonded to a solid support.

142. (Previously presented) The method of claim 17 wherein the eukaryotic cell is a mammalian cell.

143. (Previously presented) The method of claim 142 wherein the eukaryotic cell is a human cell.

144. (Currently amended) The method of claim 91 wherein the multivalent ligand has the structure:



wherein:

n is an integer that is 2 or more that represents the number of repeating units within the parentheses in the ligand; the dashed line indicates an optional double bond;

each Y, independent of other Y in the ligand, is an -O-, a -S-, an -NR^8, or a -CH_2- group, where R^8 is H or an organic group;

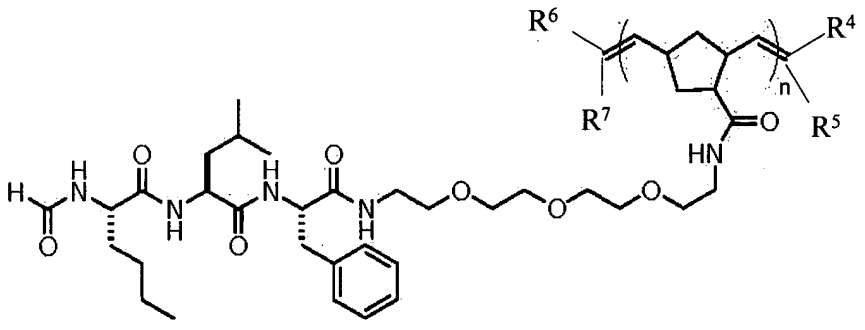
each R^1 and R^2, independent of other R^1 and R^2 in the ligand, can be H, an organic group, ~~a signal recognition element~~ -L^1-SRE, ~~a recognition element~~ -L^2-RE ~~or a functional element~~ -L^3-FE, where SRE is a signal recognition element, RE is a recognition element, and FE is a functional element wherein at least one of the R^1 and R^2 groups in the ligand is -L^3-SRE;

wherein L^{1-3} represent optional linker groups;

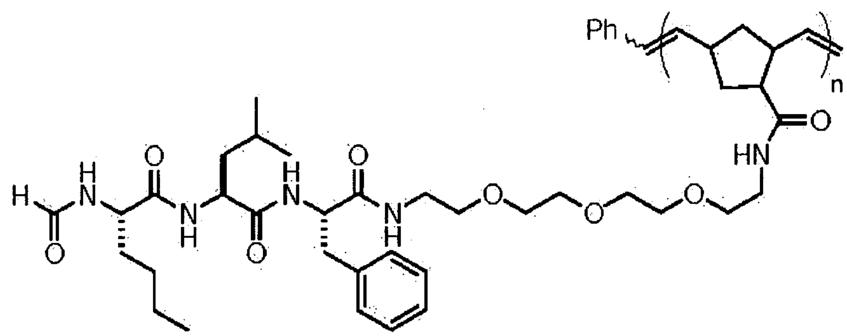
R^4 and R^5 are H, an organic group or an end-group; and

R^6 and R^7 are H, an organic group or an end-group.

145. (Previously presented) The method of claim 144 wherein the multivalent ligand has the structure:

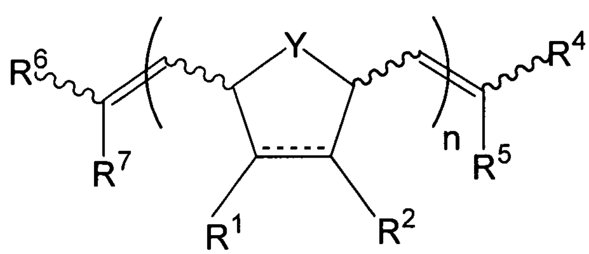


146. (Previously presented)The method of claim 145 wherein the multivalent ligand has the structure:



147. (Currently Amended)The method of claim ~~142~~ 146 wherein n is 50 or more.

148. (Currently amended) The method of claim 28 wherein the multivalent ligand has the structure:



wherein:

n is an integer that is 2 or more that represents the number of repeating units within the parentheses in the ligand; the dashed line indicates an optional double bond

each Y, independent of other Y in the ligand, is an -O-, a -S-, an $-NR^8$, or a $-CH_2-$ group, where R^8 is H or an organic group;

each R^1 and R^2, independent of other R^1 and R^2 in the ligand, can be H, an organic group, ~~a signal recognition element~~ $-L^1$-SRE, ~~a recognition element~~ $-L^2$-RE or ~~a functional element~~ $-L^3$-FE, where SRE is a signal recognition element, RE is a recognition element and FE is a functional

element wherein at least one of the R^1 and R^2 groups in the ligand is $-L^3-$SRE;

wherein L^{1-3} represent optional linker groups;

R^4 and R^5 are H, an organic group or an end-group; and

R^6 and R^7 are H, an organic group or an end-group.

149. (Previously presented)The method of claim 148 wherein SRE is a peptide.

150. (Previously presented)The method of claim 148 wherein the SRE is a formylated peptide.

151. (Previously presented)The method of claim 28 wherein the release of the intracellular signal is initiated or enhanced.

152 (Previously presented)The method of claim 28 wherein the intracellular signal is calcium.

153. (Previously presented)The method of claim 28 wherein the intracellular signal is a mitogenic signal.

154. (Previously presented)The method of claim 28 wherein the intracellular signal is a chemical species that functions as chemical signals for other cells.

155. (Previously presented)The method of claim 154 wherein the chemical signal released is selected from the group consisting of a naturally-occurring drug, a hormone, an antigen, a growth factor, a cytokine, a protein, a peptide, a derivatized peptide, a saccharides, a derivatized saccharide, a nucleic acid, a cell nutrient, or an epitope.

156. (Withdrawn)

157. (Previously presented) The method of claim 1 wherein the method is practiced *in vitro*.